

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

5 1 (currently amended): A method of determining color composition of an image, the method comprising:

calculating an intensity value and a saturation value for each pixel of the image,
wherein the intensity value of each pixel is calculated by the formula
10 $I=(R+G+B)/3$, where I represents intensity value, R, G, and B respectively
represent red, green, and blue color levels, and the saturation value of each
pixel is calculated by the formula $S=1-\text{Min}(R, G, B)/I$, where S represents
the saturation value and $\text{Min}(R, G, B)$ selects the minimum color level
among the R, G, and B color levels;

15 comparing the calculated intensity and saturation values for each pixel with first
and second predetermined threshold values, respectively;

labeling pixels with calculated intensity values above the first predetermined
threshold value and calculated saturation values above the second
predetermined threshold value as color pixels;

20 applying a mask to the image and counting the number of color pixels out of the
pixels selected by the mask; and

determining that the image is a color image if the number of color pixels selected
by the mask is greater than or equal to a predetermined density value.

2-8 (cancelled).

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9 (original): The method of claim 1 wherein the mask has dimensions of three pixels
by three pixels.

10 (original): The method of claim 1 wherein the predetermined density value is equal
30 to seven pixels.

11 (new): A method of determining color composition of an image, the method comprising:
calculating an intensity value and a saturation value for each pixel of the image;
5 comparing the calculated intensity and saturation values for each pixel with first
and second predetermined threshold values, respectively;
labeling pixels with calculated intensity values above the first predetermined
threshold value and calculated saturation values above the second
predetermined threshold value as color pixels;
10 applying a mask to the image and counting the number of color pixels out of the
pixels selected by the mask;
determining that the image is a color image if the number of color pixels selected
by the mask is greater than or equal to a predetermined density value; and
after determining that the image is not a color image, the method further
15 comprises:
calculating a first histogram of the intensity values of all of the pixels in the
image, the first histogram being divided into a first predetermined
number of intensity ranges;
choosing an intensity range in the first histogram containing the greatest
20 number of pixels;
setting a median value of the chosen intensity range as a background value
for the image;
updating the intensity values of the pixels in the image by performing a
dilation function if the background value is greater than a third
25 predetermined threshold value or performing an erosion function if the
background value is less than or equal to the third predetermined
threshold value;
calculating a second histogram of the updated intensity values of all of the
pixels in the image, the second histogram being divided into a second
30 predetermined number of intensity ranges; and

determining that the image is a black and white image if any one of the intensity ranges in the second histogram contains a number of pixels equal to or greater than a fourth predetermined threshold value, or determining that the image is a gray image otherwise.

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12 (new): The method of claim 11 wherein when performing the dilation function, a window is applied to each pixel in the image and the intensity value of a center pixel of the window is replaced according to the equation $I' = \text{Max}(W(p))$, where I' represents the updated intensity of the center pixel, $W(p)$ represents pixels included in the window around the center pixel, and $\text{Max}(W(p))$ represents the maximum intensity value of the pixels included in the window.

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13 (new): The method of claim 12 wherein the window has dimensions of three pixels by three pixels.

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14 (new): The method of claim 11 wherein when performing the erosion function, a window is applied to each pixel in the image and the intensity value of a center pixel of the window is replaced according to the equation $I' = \text{Min}(W(p))$, where I' represents the updated intensity of the center pixel, $W(p)$ represents pixels included in the window around the center pixel, and $\text{Min}(W(p))$ represents the minimum intensity value of the pixels included in the window.

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15 (new): The method of claim 14 wherein the window has dimensions of three pixels by three pixels.

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